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Virginia WILDLIFE

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A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting and Fishing in Virginia

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VOLUME XV APRIL, 1954 No. 4

In This Issue

	Page
Editorial—The Great Miracle of Life	4
The Barbours Creek Plan	5
Rabies in Virginia	8
The Yellow-shafted Flicker	11
Deer, Bear, and Turkey Kill	13
For More Wildlife and Better Fishing	14
The Beaver in Virginia	16
Dipping for Suckers	18
Controversial Conservation	20
Virginia's State Flower -The Dogwood	22
Field Force Notes	24
Drumming Log	25
Wildlife Questions and Answers	26
Herring Time in Virginia	27

Cover

Virginia's State Flower, the dogwood (CORNUS FLORIDA) received additional protection by the 1954 General Assembly.

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The GREAT MIRACLE of LIFE

NO PERSON alert to the wonderment of nature can fail to be moved by the glory of spring, a time of year when poets rush to their Thesaurus for new adjectives and ink bottles run dry for want of describing the drama of resurgent life. The dictionary simply does not contain words enough to depict the new season, a time of the year when—as the Bible puts it—the flowers appear on earth; the time of the singing of birds is come; and the voice of the turtle (dove) is heard in our land.

Spring, like other seasons of the year, comes at different periods in different parts of the country. That fascinating writer-naturalist, Edwin Way Teale, in his delightful book, *North with the Spring*, says that nobody knows exactly where spring begins. In the southeastern United States it starts before the March 21 vernal equinox and takes on the form of a slow awakening somewhere in the distant Everglades. Advancing about 15 miles a day and, gaining momentum at a slow pace at first, it gradually becomes more pronounced until in the north it becomes a full awakening. It is in the temperate belt where spring finally comes in a blaze of glory.

Nature's magnificent phenomenon—spring—is indeed a miracle and only the cessation of the miracle, as Longfellow once put it, would be miraculous.

Golden line between winter and summer, spring is many things to many people: the hidden yearning of the angler to be on a trout stream; the farmer seeding his new crop; the homeowner setting out plants around the house; the romping of children and their joyous voices in the yard or in the street; the stroll of young lovers in the park. It is the unfolding of leaves and the bursting of blossoms and the smell of freshly plowed earth. It is the song of the wood thrush in the glen and the mimical chirpings of the mocking bird high in the tulip tree. It is the great miracle of life working again.

Botanically speaking, the great miracle that takes place is called photosynthesis, that unusual power which green plants have of building up from very simple substances the more complex substances of food. The water is secured from the soil and the carbon dioxide—the very breath we exhale—from the air. The foods which are created, with the aid of the sun's energy, are sugar, glucose, and starch.

How the green plant is able to create and manufacture food for itself and for storage which can be used by animals and man no one has been able to fully explain, for to know the mystery of creation in the leaf is to know the mystery of life itself.

We do know this, however: only plants can make their own food; animals cannot. Plants can live without animals but animals cannot live without plants. This is the most important distinction between typical plants and typical animals, but we hasten to add, lest some botanist call our hand, that this does not necessarily distinguish *all plants* from *all animals*. There are several large groups of plants, like bacteria and the fungi, which are unable to make foods and depend upon other plants or animals for food. Molds and mushrooms are good examples.

The synthesis of living material to form food is a very complicated chemical process, yet in the spring when the earth warms up and the sun's rays which furnish the energy are more direct, growth takes place with great rapidity, though in a very well-planned and intricate manner.

Growth is nothing more than cell division. Cells divide and redivide, some mature as support cells, some secrete protective layers of wax, others divide and become storage places for food. It is in this food storage ability where we find plants so important to man and animals.

It seems almost ironical when we consider that man, who has learned to split the atom and do great things, has yet to find a way to make food. He can extract food, he can change it around, he can help nature grow it, but he himself cannot synthesize it. Man who has learned to fly faster and farther than any bird, who has done wonders in technology and medicine and chemistry, is still powerless to create a living cell, is still dependent on the green chloroplast of the plant for his food.

The dependence of animals upon plants and the interdependence and inter-relationships of plants to animals is one of the basic concepts of conservation. When we better understand this relationship—and our own relationship to plants and animals—the aurora of life comes clearer into focus. There is hardly a better time to observe nature than in the spring when Mother Earth sends warmth through its bosom and every grace is unloosened and everything spells of hope.

—J. J. S.

Want better trout fishing? Longer and more equable harvesting? Then read about the Barbours Creek Plan. It may have a partial answer to a perplexing problem.

The Barbours Creek area in the Jefferson National Forest.

The Barbours Creek Plan

By R. H. CROSS

Leader, Virginia's Forest Game Program

THE OLD "opening day rush" is nothing new to fishermen who frequent the trout streams in the western part of Virginia. Sportsmen have complained for years, but the only thing that's happened is a new crop of "standing room only" stories after each season. Nobody seems to enjoy the congestion and confusion, yet they continue to go in self-defense. If an individual can't get to a stream within the first three days, he's literally "missed half the fishing." A minimum of 53 per cent of the stocked trout was removed from one test stream during the first 2½ days of the 1953 season.

Chances are that every trout fisherman has dreamed of solutions to this perplexing problem at one time or another. First, supplemental releases throughout the season were tried. This practice simply recreated opening day madness whenever a fish truck was seen headed for a brook. To "follow the fish truck" became a standard angling procedure for the man who insisted on catching a fish. One employee reported a group of anglers who appeared regularly at the hatchery in the early mornings and patiently waited until the fish truck departed with its cargo of brooks and rainbows. The early birds simply fell in behind the truck and that day fished the stream that was scheduled for restocking.

The Barbours Creek Plan was another approach to the same problem. Barbours Creek, which originates and flows through approximately five miles of the Jefferson National Forest, was chosen as a suitable place to test this trout stocking plan which had been developed previously in Vermont on the New Haven River. At this point it might be well to emphasize the ultimate objectives and at the same time, explain the new release plan.

First, our Commission of Game and Inland Fisheries is striving to provide recreation for Virginians who enjoy the sports of hunting and fishing. It is not the Commission's wish nor responsibility to fill every hunter's bag or fisherman's creel, but it is charged with managing the fish and wildlife resources in harmony with other land use practices. The actual value of a rainbow trout or a ruffed grouse is measured in man-hours of recreation rather than in pounds of food. It is certainly a small minority of our sportsmen who take to the fields for meat instead of fun and relaxation.

Then consider Barbours Creek, a stream which was annually stocked with 5,000 trout, in the National Forest portion of the stream. These fish represented a considerable amount of time and effort on the part of the Commission's Fish Division and the law enforcement officers who patrolled the streams night and day before the annual season opened. The cost was high. The fish, which were yearlings, required one year to produce and at least 50% of them served their usefulness in the short period of THREE days.

Opening day crowds on trout streams pose a serious problem. The Barbours Creek plan offers a partial solution to this situation.

Since considerable time and effort is being expended in the production, release and protection of 5,000 trout for this water annually, it is logical to expect these efforts to bear fruit over a period in excess of three days. As previously mentioned, Virginia fishermen do not demand a creel limit of trout for every trip afield. However, they do expect the Commission to assure that their lures are not being cast over barren waters, so the problem is quickly resolved into one of perfecting some means of preventing a large percentage of the hatchery reared trout from being taken from the stream so soon after the season opens. A substantial reduction in the opening day take would accomplish two things. More fish would be left to be angled later in the season and it would reduce the tremendous concentrations of fishermen on the first day of the season.

The New Haven experiments in Vermont were designed to test the validity of theory that brooks, when released, go upstream while the rainbows head downward for the larger waters. A series of closed sections, alternating with areas of open water, were established on the river and marked trout were released in sections closed to fishing. A continuous creel census indicated that generally neither species showed any preference with regard to direction of emigration. Contrary to the old theory, the rainbows traveled in both directions and so did the brooks. It might be mentioned, however, that other experiments have shown that the brooks do not normally travel as far as the rainbows, a point to be remembered in the uniform release of these species in open streams.

In addition to the data on emigration, it was found that fish placed in closed sections gradually moved to open waters, thus providing uniformly good fishing for a considerable period in a stream which was normally fished out during the first two or three days of the season. It was with this thought in mind that the Commission, cooperating with the United States Forest Service, set about establishing a group of alternate closed and open areas on Barbours Creek in 1950. Immediate results were encouraging enough for these efforts to be continued and at the present time everyone is still enthusiastic. These areas, three in number, are each 2/10 of a mile in length and spaced one mile apart.

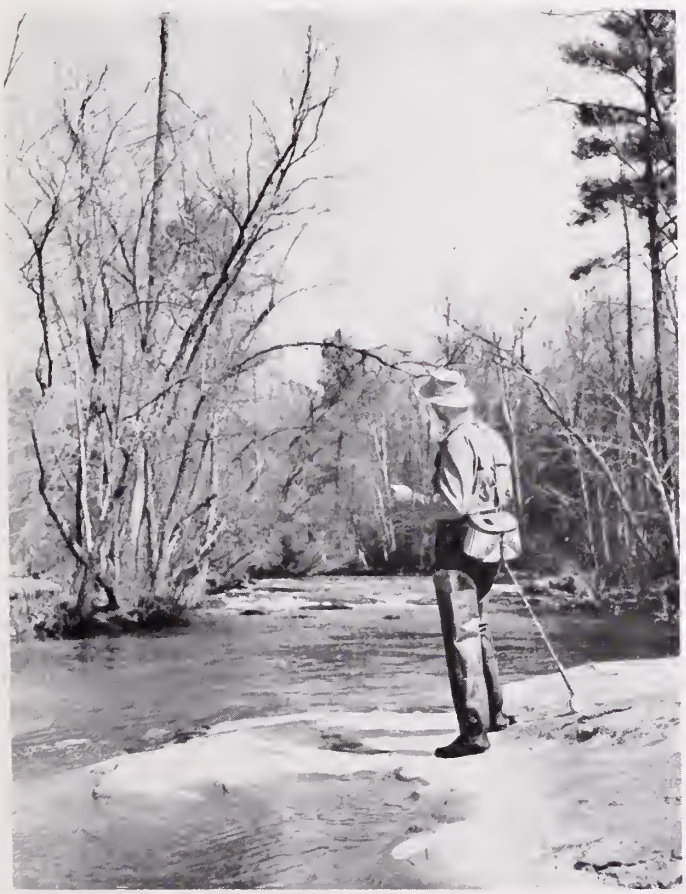
Last year Barbours Creek was uniformly stocked with 3,000 brooks and rainbows in March. On May 29, 1953 the three closed areas received 500 trout each. On May 30, 1953 a trout census was made beginning one mile below the first closed area and terminating one mile above the last area. The census, whose purpose was to determine trends rather than to obtain accurate numbers, was simply a visual count made while walking the stream at a normal pace. On May 30, 474 trout were observed in open waters and 824 trout in the closed sections. On June 20, 1953, 112 trout remained in the closed sections, with 37 fish in open waters. On July 25, 1953 the closed areas contained 29 fish and there were 17 trout available for anglers. As already mentioned, these counts cannot be considered accurate, since it is not known what per cent of the fish in a stream can be counted by the average individual.

These figures clearly indicate the value of the Barbours Creek Plan in making more trout available over a longer period of time. More important, however, are the results in fisherman use during this period. Since

TOP RIGHT: Restocked closed areas release fish to open water gradually, thus providing longer, better, fishing. LOWER: Author (right) and local game manager check closed section of Barbours Creek.

the plan has been in operation all mid-season releases have been publicized well in advance of the times the fish actually were placed in the stream. Heretofore, mid-season releases on open streams brought literally hundreds of fishermen who started angling before the last fish was off the truck and stayed until the supply was practically exhausted. The rodeo usually lasted three or four days, after which time the stream was deserted again. With the present plan Commission employees are lucky to find enough anglers present when the fish truck arrives to assist in the restocking. Usually there are 10 or 15 men, willing to help carry the buckets of trout and then return home knowing that some of those fish will be in open waters the following day. Some trout have been observed moving out of the closed areas a few hours after being released and the trickle continues for a month or more. So, on Barbours Creek the picture has changed. No longer is there heavy mid-season fisherman concentration. Instead, from one to a dozen anglers may be found on the stream every day throughout the season. Few creels are filled but every fisherman has the satisfaction of knowing that he is casting over trout. In this connection, sportsmen as well as Commission personnel have made observations which are perhaps difficult to explain. Trout moving from the closed areas to open waters have exhibited a wariness not common to the usual run of hatchery-reared fish. Such behavior has been a welcome challenge for the experts and somewhat

With opening day crowds gone, the trout angler can better enjoy his sport.



A late catch of rainbows. Longer acclimated fish are better fighters, superior eating.

baffling to the amateurs. Last season three men were observed on a bridge under which seven or eight rainbows were clearly visible. One fellow was casting a dry fly, the second, a fly and spinner, and the third was fishing with a juicy grasshopper. Those trout simply were not interested! However, there were no complaints as the anglers reluctantly gave up without a single strike.

Does the Barbours Creek Plan pose new and difficult enforcement problems? Yes, but surprisingly few. During the first year of operation, adherence to the plan was strictly voluntary, with the idea that the work would be discontinued unless favored by the majority. The system is still in operation and all concerned are looking forward to another successful season. Since the first year, there has been passed a regulation prohibiting trespassing within the closed areas, each of which is well posted and surrounded by a single strand of wire. The plan will also be tried on the North Fork of Jennings Creek this year and according to previous agreement, discontinued unless the majority want it and are willing to cooperate.

In addition to improving the fishing as well as reducing angler concentration, the Barbours Creek Plan has brought to mind another important fact. Virginia's sportsmen, both hunters and fishermen, are all interested in the state's game and fish management projects and problems. Furthermore, they are more than anxious to help in any work designed for the improvement of everybody's sport.

Of course, the Barbours Creek restocking program has certain limitations. The closed sections must be fairly accessible to fish trucks and restocking teams. It is not practical to carry fish long distances by hand.

There is also some doubt if the plan would work on private lands, because of the enforcement angle. National Forest streams, all open to public fishing, offer perhaps the best outlet for this new stocking technique.

RABIES in Virginia and its relation to wildlife

By JOHN C. JONES

BY THE FALL of 1951, rabies reached epidemic proportions in sections of Virginia and West Virginia. A few cases were also reported in Maryland. At the same time, a number of other States were undergoing the same experience with adjoining or parallel epidemics. Although dogs were the main carriers in some localities, many cases appeared in wildlife, foxes being the principal carriers of the disease. This epidemic in wildlife became possible largely because of the tremendous increase in populations of all long-haired furbearers in the post-war years. Foxes, as well as skunks, raccoons, and opossums, have greatly increased their numbers practically everywhere in the eastern half of the United States. Much of this gain can be attributed to the lack of trapping pressure, the market value of the fur of these animals having practically vanished with changes in styles of the past ten years.

Since high populations produce conditions ideal for the spread of diseases, it is not surprising to note the spread of rabies once its presence became established. With foxes capable of moving as much as 100 miles, county and state lines present no barriers to its movement. A red fox, in Michigan, was recently reported to have traveled 160 miles from the point of its release. Gray foxes far outnumber the red over much of Virginia and the adjoining states, although the reverse is true in some sections. Today, the population trend is downward in a few places, reflecting the results of the disease and of control programs, but fox numbers remain high in most areas.

Misconceptions and misunderstandings regarding the nature of this dread disease are many. Any warm-blooded animal can contract it—mammal or bird. It is extremely difficult to detect in early stages, but once visible symptoms appear it is always fatal. The extreme spread of its incubation period, varying from a few weeks to a year or more, probably accounts for much of the spotty distribution over a large area. This factor is important, for most people are accustomed to think of epidemics or disease outbreaks only in terms of large numbers of cases. Here, however, is a disease in which the first case is cause for alarm, as a single individual is capable of planting the seeds of a slow developing and long dragged out infection. Much of the nature of rabies, particularly in wildlife, remains unknown and research in this field is sadly lacking. Present control methods are based upon breaking the chain of contact between victims and susceptibles. In dogs, this is done through mass vaccinations and elimination of strays. In wildlife, population reductions serve the same purpose. It must be remembered that such a program is not intended to eradicate or exterminate foxes (or skunks, or coons, or whatever wildlife species is unhappily involved in the epidemic). Control is aimed at the *disease*, and the goal is a sound and healthy animal population.

In Virginia, three separate areas of infection have been prominent. The northern counties, and those adjoining in West Virginia, have been experiencing an epidemic centered almost wholly on the fox population, although by now almost all of the larger wildlife

species or mammals, as well as most domestic varieties, have been involved. In southwestern Virginia, and adjoining areas of West Virginia, Kentucky, Tennessee, North Carolina, foxes and dogs have been equally responsible; some local areas reported the disease present in one, some in the other, and some in both. In eastern Virginia, the disease is almost entirely a dog problem thus far. Last year the disease successfully crossed the Capes and early this past year appeared in the lower eastern shore counties of Maryland. Raccoons also became infected, but, surprisingly, no cases were seen in foxes despite their prevalence in that area.

PRESENT STATUS

Use of the fiscal year as a reporting unit has a distinct advantage over the calendar year from a fox-wildlife standpoint. Since the period of greatest activity of foxes is during the winter months prior to denning and rearing of young, rabies incidence and spread are enhanced and become more apparent. Data plotted on a fiscal year basis thus tend to reflect the activity of a single "season," while the same figures listed on a calendar year would tend to represent two separate "seasons." This factor would, of course, have no bearing where dogs are concerned, no one time of the year being more favorable than another.

A comparison of conditions between the past two fiscal years does not give much encouragement. There were 415 laboratory-proven cases of rabies in Virginia reported for the fiscal year 1951-52; at the same time West Virginia reported 143 cases, and Maryland only 4, for a grand total of 562 in 3 states. The year 1952-53 saw 432 cases in Virginia, 293 in West Virginia, and 35 in Maryland, making a total of 770 cases in all. A breakdown of these figures, listing the number of cases by kinds of animals involved, is shown in Table 1.

Table 1. Rabies Totals in Virginia, West Virginia, and Maryland in Fiscal Years 1951-52 and 1952-53.

SPECIES	Virginia		West Virginia		Maryland	
	F.Y. 1951-52	F.Y. 1952-53	F.Y. 1951-52	F.Y. 1952-53	F.Y. 1951-52	F.Y. 1952-53
Dog	195	167	113	230	1	27
Cat	24	26	5	17		
Cattle	48	66	7	9		3
Horse	1	2				
Sheep	1	3		2		1*
Hog	3	2				
Fox	141	155	17	34	3*	2*
Bobcat	2	4				
Racoon		2				2
Skunk		3		1		
Deer		1				
Rat		1				
Woodchuck			1			
TOTALS	415	432	143	293	4	35

* Unconfirmed by laboratory.

The greatest short-coming of these figures is that they represent only those animals sent in to state laboratories for positive identification. It has frequently been noticed that once the presence of the disease has been established in a particular area, the number of animals sent into the laboratory for a check drops off to cases involving humans, or sometimes where other animals have been bitten. Particularly is this true in the case of large animals, such as cattle. Then too, many heads are in such poor condition when they are received by the laboratory that they cannot be examined. The so-called "clinical" cases, identified locally but not laboratory confirmed, are not usually reported. The figures quoted, then, should be considered as an indication rather than an accurate picture of the conditions actually present.

In this second year phase of the epizootic, fox cases in the three states totaled 191, almost a 20 per cent increase over the previous fiscal year. A few skunks and raccoons have been found positive, along with at least 4 bobcats, a deer, and one rat. Cases in dogs rose to 424, a startling 35 per cent jump, although this figure represents a slight drop in Virginia, while West Virginia cases more than doubled. Cats became victims in a number of instances, despite widely-held views as to their innocence, 43 being so identified by the laboratories. One cat in Madison County bit 4 people before it was captured; all four took anti-rabies treatment. Some 78 heads of cattle were found positive for rabies, 66 in Virginia alone. The Virginia Department of Agriculture estimates this last figure represents about 10 per cent of the actual livestock loss in the state.

The foregoing data give some indication of the widespread distribution of the disease and the severe economic losses that have been sustained as a result. Although livestock have been the principal source of financial loss, other domestic animals and many valuable dogs have also succumbed to rabies. Added to this is the surprising number of people that have been bitten by rabid or questionable animals. Unfortunately there is no reporting of the number of Pasteur treatments given by either private physicians or public health officials, so there is no way of knowing the total number of people that have been required to undergo this exceedingly painful and quite dangerous procedure. The total can best be judged by the fact that the Virginia State Health Department furnished 519 sets of vaccine to local health departments alone during the past fiscal year. That no human deaths were reported up to that point was indeed a miracle, but one that was short-lived, however, for the first case in a human was reported in August from Newport News, the fatality resulting from contact with a rabid dog. The total impact of the disease on the state thus adds up to a tremendous economic loss as well as the threat to human life.

That fox rabies can be controlled has been amply demonstrated in other parts of the country as well as in Virginia. Following the outbreak in foxes two years ago, with consequent heavy livestock losses and humans being bitten, the northern Virginia counties of Clarke, Loudoun, Fairfax, and Prince William, act-

ing together, adopted a complete program of dog vaccination, stray dog roundup, and fox reduction. This past fiscal year only 4 cases were reported, 2 foxes, 1 dog, and 1 cat from all four counties. Three adjoining which only partially followed the program recommended had, at the same time, 85 laboratory proven cases, 47 in foxes. In three counties that depended upon bounties alone to reduce the fox population there were 62 rabid foxes reported, an actual increase over the previous year.

Control of rabies in dogs is even less of a technical problem and requires mainly determination to make it effective. Mass innoculation and stray dog removal has time and again shown itself to be practical and effective. Cases in Virginia dropped from 195 a year ago to 167 this past year, reflecting largely the effectiveness of dog control programs of the few counties that adopted them.

It should be apparent that speed is a most important criterion in the functioning of a rabies control program. In every county that has succeeded in controlling rabies, both in this and in other areas of the country, the job has been completed in a two- to three-month period. Similarly, experience has shown, too often, that there is little value received from a half-hearted program that drags out over a long period of time. The animal population involved must be rendered negative—either by vaccination or reduction in numbers—as quickly as possible. There is no value whatsoever in adopting a year-long bounty on foxes or other wildlife just to control rabies. A bounty is used here simply as a device to insure that foxes will be brought in and counted so that the program can be discontinued when enough have been taken, and partly to repay county residents for the time spent in participating in the program. Similarly, dog vaccination and control of strays must be accomplished quickly and thoroughly. A minimum of 75 per cent of the one or more animal populations involved should be brought under control within the three-month period.

Complicating the picture has been the necessity for a county by county approach to an area problem. Control operations have been entirely a matter of individual county concern and action. With the single exception cited above, adjoining counties fail to respond alike, and adopt different programs, if any. One county even abandoned both dog vaccination and fox reduction because of lack of cooperation from its neighbors.

A listing of rabies cases, by county, for the past two fiscal years is shown in Table 2, together with actions that were being taken during the past fiscal year. It should be noted that several counties have since adopted dog control programs during the latter portion of 1953 and a few more were scheduled to go into effect early in 1954.

GENERAL RECOMMENDATIONS

It is apparent from the past two years' experience in this area, and from viewing conditions that have taken place in other regions of the United States, that rabies control must be based upon a program encompassing the entire local area affected by the disease.

(Continued on page 12)

Table 2. Rabies Cases Reported in Virginia, by Counties, Fiscal Years 1951-52 and 1952-53, together with Actions Taken or in Force the Past Fiscal Year.

COUNTY	No. of Cases		Action Taken			
	F.Y. 1951-52	F.Y. 1952-53	Dog Control	Fox Reduction	Fox Bounty	No. Foxes Destroyed
Accomac		1	No	No	No	
Alexandria (City)	1		Yes			
Augusta	1	1	No	No	No	
Bath		2	No	No	Yes	91
Bland	8	16	No	No	No	
Botetourt	1		No	No	No	
Buchanan	3	20	No(1)	No	No	
Carroll	10	12	No	No	No	
Charlotte	1		No	No	No	
Clarke	6	1	Yes	Yes	Yes	140
Culpeper		15	Yes	No	Yes(2)	14
Fairfax	5	1	Yes	Yes	Yes	189
Fauquier	49	22	Yes	Yes	Yes	141
Floyd	1	2	No	No	No	
Franklin	9	6	No	No	No	
Frederick	36	42	No	No	Yes	415
Giles	1	12	No	No	Yes	10
Gloucester	1		No	No	No	
Grayson	16	12	No	No	No	
Greene	1		No	No	No	
Hampton (City)	62	26	No			
Henry	5	1	No	No	No	
James City	3	1	No	No	No	
King George		1	No	No	No	
Lee	7	10	Yes	No	No	
Loudoun	23	1	Yes	Yes(3)	No	
Madison	1	9	Yes	No	No	
Matthews	2	2	No	No	No	
Montgomery	2	5	No	No	No	
Nansemond	3		No	No	No	
Nelson		1	No	No	Yes	2
Newport News (City)	11	2	Yes			
Norfolk		1	No	No	No	
Northampton	3	8	No	No	No	
Nottoway	1		No	No	No	
Orange	1		Yes	No	No	
Page			No	No	Yes	62
Prince William	6		Yes	Yes	Yes	67
Pulaski	4	14	No	No	No	
Rappahannock	13	14	Yes	No	Yes(3)	10
Richmond (City)	1		Yes			
Roanoke (City)	3	3	Yes			
Rockingham	1	1	No	No	No	
Russell	2	14	No(1)	No	No	
Scott	24	19	Yes	No	Yes	136
Shenandoah	1	23	No	No	Yes	374
Smyth	1	5	No	No	No	
Spotsylvania	1		No	No	No	
Tazewell	28	46	No	No	Yes(4)	73
Warren	42	21	No	No	Yes	172
Warwick	40	5	Yes	No	No	
Washington	1	6	No	No	No	
Wise	5	6	No	No	No	
Wythe	17	18	No	No	No	
York	2	8	No	No	No	

(1) Dog vaccination program being planned.
(2) Bounty adopted 6-1-53.
(3) Gray fox only.
(4) Bounty adopted 4-1-53.

A flicker feeds its young.
(National Audubon Society photo by Cruickshank)

The YELLOW-SHAFTED Flicker

By JOHNNY COOPER

* Editor's Note: This article was written by a 14-year-old subscriber to VIRGINIA WILDLIFE and a budding ornithologist from Blacksburg, Virginia.

ONE of the most common of the Virginia woodpeckers is the yellow-shafted flicker. This is one of the few brownish colored woodpeckers and the only one that commonly feeds upon the ground.

The male of the species can be distinguished from the female by the black cheek patches on the throat. Both male and female have these patches in juvenile plumage. The flicker has a white rump, and yellow under its wings and tail. Its breast is a buff color heavily marked with dark splotches. The sides of the face are light tan or buff and the top of the head is a light gray with a red patch on the nape of the neck. The flicker also has the usual undulating flight of the rest of the woodpecker family.

The flicker feeds in open country, in an orchard or in a woodland. Ants are the flicker's favorite and most important food, and a single stomach was found to have contained more than 5,000 ants. The flicker has a sticky tongue, and when inserted in an anthill, the ants try to fight off the intruder and are lapped up. The flicker eats a great variety of other insects and wild fruits, among which grubworms and poison ivy berries are favorites.

The flicker has been given a number of names such as golden-winged woodpecker, yellow hammer, hairy wicket, yarrup, wake up, high holder and others.

The yellow-shafted flicker is about 13 inches long and is distinguished from its cousin, the red-shafted flicker of the western United States, by bright yellow under the wings and tail instead of the salmon-red undersurfaces borne by the red-shafted flicker.

The flicker has many distinctive calls. The most common is a clear wick-a-wicker wick-a-wick. It also drums on hollow limbs, tin roofs and other objects with its bill. Flickers are noted for their pleasing dispositions around other birds.

The flicker nests in a cavity usually about 2 feet deep and 7 or 8 inches in diameter excavated by both birds in a dead tree or limb. Natural cavities and bird houses are sometimes used. The entrance hole is usually from 2¾ to 3 inches in diameter. Apple and sycamore trees are favorite nesting sites of these birds. Six to 8 white eggs are laid during April or May and both birds assist in the incubation. The incubation period usually lasts about 3 weeks. The young stay in the box about 21 days before leaving. The flicker builds no nest but excavates enough woodchips and sawdust in which to lay the eggs. If a bird house is built for flickers it should be about 20 inches in length, the entrance hole from 2¾ to 3 inches about 16 inches above the floor and about 3 or 4 inches of woodchips and sawdust placed on the bottom. Place the box from 10 to 30 feet above the ground.

The flicker breeds from Alaska and Labrador, south to Virginia and Florida, west to Oklahoma and the Gulf Coast. It winters from Maine to Michigan, Ontario and South Dakota down to the Gulf Coast of Texas.

One day in March I went to some woods and found a suitable log for a flicker house. This hollow log was about 20 inches long and I made an entrance hole about 3 inches in diameter, placed 15 inches above the floor. The floor of the cavity was about 8 x 8 inches. I put this box about 15 feet up in a tulip poplar but starlings soon found it and I had to take it down.

About the middle of May I put the box up again, but this time about 9 feet high in an old pine. One Thursday morning before school and about a week after I had put the box up, I saw a male flicker perching on the box. He went in and came out and then flew away. After that nothing happened until the following Sunday. I happened to look out of the upstairs window and there were not one, not two, but three flickers perched on the box. These three flickers frolicked around together in our neighborhood for about 10 days and then one of them left. About the 7th or 8th day of June the eggs were laid. I noticed that both birds took part in the incubation. One of the birds would be setting on the eggs while the other would go for food and then relieve it. This was the system they used.

One afternoon I was sitting out in the back yard watching the male flicker perched on a telephone pole some 25 feet away from the nesting box. A group of starlings alighted in a tree and one of them went to explore the box. The male flicker unnoticed by the starling dove with wings folded from the telephone pole and hit the starling at full force with his powerful bill. The starling dropped from the box presumably with its neck broken. When I reached the scene of the happening the starling was dead. I had noticed how friendly the flickers were around other birds, such as the catbird, robin, bluebird, brown thrasher, etc. on our birdbath and around the yard, but one was quick to fight in defense of his home.

The 15th of June I went to Scout Camp and my father wrote me frequent letters about the flickers. About four days before I left camp, father wrote that he thought the young ones had hatched. When I arrived home, sure enough the young had hatched. The parents made about 2 or 3 trips with food to the box every half hour. I spent most of my time watching the box and watching the flickers grow. About the 15th of July the babies had grown enough so that they were sticking their heads out of the entrance.

The feeding of the young is a painful process to watch. The parents apparently digested the food and pumped it into their stomachs. Most of the food for the young consisted of ants. The flickers started growing quite fast and one afternoon my friend and neighbor, Dr. Henry S. Mosby of the Cooperative Wildlife Research Unit here at Virginia Tech., took several pictures of the flickers. One morning after I had finished delivering papers I went down to the box. I heard the adult birds call and the young would return the call. Finally two young flickers flew from the box. They were the last two out of what I thought were 5 or 6, although I never knew how many there really were. The young stayed in the box about 25 days before leaving. The parents and the young have been visiting my birdbath quite frequently and the young now have all of their mature plumage.

The flicker is a very interesting and comical bird and I have enjoyed studying him very much. Remember the dimensions given for a flicker house. It takes just a little work to build such a house and you might get as much pleasure and fun out of a family of flickers as I did.

Last year I became interested in birds, so I made some bird houses and put them up in our yard. I made about eight, and of these, seven were occupied by house wrens. I read several bird books and became interested in the flicker. I read of occasions where flickers nested in bird houses, so I decided to make a flicker house.

RABIES (Continued from page 10)

At the same time it is also obvious that local support cannot be counted upon in areas where the disease is not present or threatening at the particular time. The practical approach based on these premises would seem to be as follows:

1. The state should designate, at state level, one single agency to be responsible for the over-all program. Other interested agencies should be represented on a committee officially appointed in order to insure coordination of effort and cooperation by their personnel.

2. The responsible agency, upon determination of the presence of rabies in a county, should designate that location as an emergency area, including the affected county or counties and a border of adjoining counties in order to form a barrier to prevent further spread of the disease.

3. The responsible agency should then organize, or assist the counties to organize, an area-wide program in which each county involved adopts the same program at the same time and pursues it with equal vigor.

4. Interstate action in areas overlapping state boundaries should follow the same pattern of approach and coordination.

A broad-scale pattern of approach such as outlined above is essential if an effective program is ever to be developed. On the local scene, the three-part balanced program of vaccination, stray dog and cat clean-up, and reduction of wildlife reservoirs when present, has been sufficiently described and detailed in the past. With the exception of the small technical staff in the "responsible agency," sufficient personnel are now present at all levels of state and local agencies to inauguarate the entire program and determine specific local needs.

Deer, Bear, and Turkey Kill for 1953-54

By CHESTER F. PHELPS

Chief, Game Division

WHILE the world of business worries about recession, the Virginia big game and turkey hunter has just come through his most "prosperous" year. Every known record was shattered by the returns from the checking stations as the kill of deer, bear and wild turkey topped any made since the statewide tagging system for these species went into effect.

Perhaps the brightest figure of all is the 60% increase in the turkey kill. Fears were expressed in many quarters last year that the turkey had suffered a severe setback. Apparently this was the case and even now turkey populations could be vastly improved, but the increased kill does indicate that given a reasonable chance and a favorable breeding season the turkey can make a remarkable come-back.

It will be recalled that antlerless deer were legal game during the last day of the 1952-53 season in the western counties of Augusta, Bath, Frederick, Rockingham, Shenandoah and a part of Warren. As a result, 1,288 antlerless (does and young bucks) animals were taken, a number more than 10% of the total state kill, and persons not familiar with the breeding potential of a healthy deer herd freely predicted that irreparable harm had been done the deer in those counties. This year, however, the kill of bucks in these same counties exceeded that of last year except in two instances, Augusta and Bath. Even in these two counties the kill of mature (antlered) bucks this season exceeded that of last year as many of the bucks taken during 1952-53 had no visible antlers and were obviously shot in the belief that they were does. This experience is only one more indication of the soundness of keeping our deer herd under control by proper management and surplus removal.

Big Game and Turkey Kill, 1953 - 54

	1951—52			1952—53			1953—54		
	Deer	Bear	Turkey	Deer	Bear	Turkey	Deer	Bear	Turkey
Accomack	8			4			7		
Albemarle	55		50	68		30	74	3	47
Alleghany	90	12	21	87	16	14	132	23	20
Amelia	41		80	56		58	85		68
Amherst	37	6	15	39	10	2	66	6	26
Appomattox	37		46	35		33	54		54
Augusta	541	30	77	1,131	105	68	635	127	129
Bath	465	25	84	917	19	48	689	30	161
Bedford		2	4		7	3		8	11
Bland	16	5		23	8		44	6	
Botetourt	63	3		74	34	7	113	27	19
Brunswick	23		28	18		26	17		36
Buckingham	163		143	173		102	219		164
Campbell	3		24			22			26
Caroline	116		87	514		66	638		71
Carroll							1		
Charles City	255		12	327		8	378		12
Charlotte	26		71	17		58	13		80
Chesterfield	80		65	79		64	124		63
Craig	113	1		112	6		236	9	
Culpeper			29	31		18	48		22
Cumberland	62		43	45		48	80		89
Dinwiddie	57		66	83		55	83		63
Essex	40		11	108		7	93		4
Fairfax						7			
Fauquier			55			27	16		38
Fluvanna	17		40	16		31	33		55
Frederick	237		51	432		15	389		87
Giles	112			147			205		
Gloucester	36			40			51		
Goochland	25		22	14		17	29		18
Grayson	138			145			169		
Greene							4		
Greensville	39		16	44		13	65		20
Halifax	227		101	201		115	192		119
Hanover	48		12	55		12	79		10
Henrico	18		4	9		5	16		8
Highland	107	11	44	119	11	28	149	11	75
Isle of Wright	50			60		3	86		
James City	195		9	189		6	235		12
King George	43		10	71		11	84		24
King & Queen	53		13	169		15	195		20
King William	97		1	97		5	133		13
Lancaster	12			19			20		
Lee	9			10			14		
Loudoun			2			3			1
Louisa	18		50	41		53	50		47
Lunenburg	6		25			17			21
Madison					1				
Mathews	15			12			25		
Mecklenburg	9		53	15		33	4		37
Middlesex	21			21			17		
Nansemond	85	4	1	118	9	2	161	17	
Nelson	24	10	32	19	5	22	30	5	9
New Kent	255		1	261		21	302		44
Norfolk	233	7		238	5		393	8	
Northumberl'd	17			14			22		
Nottoway	2		19			13			5
Orange			52	20		34	34		54
Page	65	1	2	64	6		132	2	1
Pittsylvania	1		10			18			19
Powhatan	34		67	38		51	42		50
Prince Edward	16		32	13		21	21		39
Prince George	228		31	544		28	513		52
Princess Ann				1					
Prince William			46			28			44
Pulaski								1	
Rappahannock				1			8		
Richmond	24			40			42		
Roanoke	14			9	1		13		
Rockbridge	65	15	29	60	25	12	107	30	54
Rockingham	198	14	21	256	48	8	370	32	46
Russell				1			8		
Scott	132			100			161		
Shenandoah	512		45	1,196	1	10	743	2	110
Smyth	225	2		235	2		299	7	
Southampton	322		23	350		18	435		8
Spotsylvania	50		122	37		71	61		96
Stafford			62	28		28	56		41
Surry	113		34	208		22	252		28
Sussex	650		52	586		43	483		53
Tazewell	21			30			51		
Warren	73		2	121		1	122		
Warwick				15			62		
Washington	72			97			139		
Westmoreland	29			35			58		
Wise	109			104			140		
Wythe	48			64	8		80	5	
York	74		1	97		4	339		10
TOTALS	7,514	148	2,148	10,867	327	1,608	11,768	359	2,533

FOR MORE WILDLIFE and BETTER FISHING

Keep the Soil on the Watersheds

USFS, SCS, and Game Commission Photos

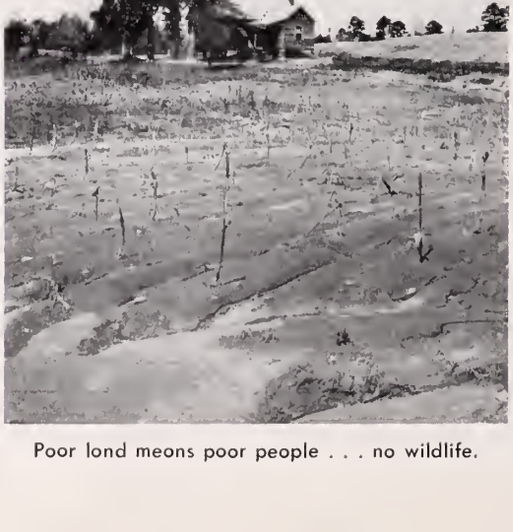
Cleor cutting of forests ond fire ore two foctors that precipitote land erosion ond stort o chain reoction of destruction.

Proper lond monogement holds top soil in ploce; prevents soil woshing.

Badly mistreated lond needs bold corrective oction.

Watersheds control streo [illegible] goo[illegible]

When lond gets to this stoge, its use is gone.



Poor lond meons poor people . . . no wildlife.

Erosion can be checked. Pine mulching, staking, planting helps. Best solution is prevention, not exposing erodable soil.

Farm ponds hold water on the land. This is especially needed where the watershed has been denuded.

ls, and stream levels determine
ad fishing.

Wise farm management not only provides for soil conservation measures but seeks to improve land productivity, including food and cover for wildlife.

A good farm pond supplies landowner with food and fun, water for livestock, and an attractive habitat for marsh wildlife.

Present status of-

The BEAVER in Virginia

By JAMES W. ENGLE, JR.
District Game Technician

THE BEAVER has been one of the most important furbearers in the history of the nation. It was the early trappers, searching out the rivers and streams, looking for new trapping territory, who pushed the exploration of our continent ever westward. Trappers and furbearer were responsible for some of the first big fortunes made in this country.

According to historians, beaver were at one time very plentiful in Virginia. Considering the consistent overtrapping and the destruction of habitat, it is surprising that they managed to survive until 1911 when the last beaver were killed in Dinwiddie County.

The Virginia Commission of Game and Inland Fisheries began a program of re-establishment of beaver in Virginia in 1932. From 1932 through 1948, a total of 88 beaver was purchased from Pennsylvania, Michigan, New York, New Hampshire, Maine and West Virginia. In addition, numerous beaver have moved over the Alleghany Mountains from West Virginia into the Virginia Counties of Alleghany, Bath and Highland. Beginning in 1943, the Commission began a program of live trapping and transplanting nuisance beaver within the state. This activity has resulted in a yearly transplanting of from 8 to 25 beaver each summer.

The beaver has an interesting life cycle. It gets off to a rather slow start in reproducing its kind, but most states report an increase of from 40 to 60 per cent. Once a colony has been established, it will produce 4 to 6 young a year. A pair of beaver will set up housekeeping during the early summer in some place suitable to them, but not always suitable from the landowner's point of view. The age at which these young beaver leave home is two years. The first summer, just two beaver are present. The following spring the new colony will produce 4 to 6 young, giving a potential of 6 to 8 beaver present by the second summer. Another litter of 4 to 6 in the second spring can bring the population up to 10 or 14, comprising 2 adults, 4 to 6 yearlings and 4 to 6 kits. Finally, in the third spring the two-year-olds are driven away from the home to start out for themselves. Thus a colony may have two, six or ten beaver present, depending on the length of time it has been established.

With the limited start and the wandering nature of newly released beaver, it is surprising that we now have, by a conservative estimate, 284 colonies of beaver in 46 of our counties. There are probably about 1,600 or 1,800 beaver in Virginia today, compared to the original 88 purchased beaver plus some migrants from West Virginia.

When the beaver were first brought back to Virginia it was thought that they could be planted on the headwaters of our mountain streams, helping soil conservation and holding up the water table during the summer months. But during the years the beaver had been away from Virginia, we had forgotten a great deal about their habits. The beaver did not stay on the headwaters of our streams, because of the steep gradient, rocky bottoms and narrow valleys. The beaver moved downstream until the gradient was less and streams not so rocky, with mud bottoms and banks. Here he could build dams and lodges with mud and sticks. Here he could cut a winter food supply of brush in the early fall and anchor it to the bottom as his instinct told him to do in the preparation for a cold and freezing winter. Along these slower moving streams in the mountains also is farm land, and here the beaver causes trouble. The cutting of corn and apple trees are the

main cause of trouble between the beaver and his landlords. Beaver released in eastern Virginia settle in the swamps and bogs, and thus do not have the opportunity to cause agricultural damage.

While the beaver may occasionally get into trouble with farmers, he helps his wild cousins, such as the muskrat, raccoon, otter and ducks by building ponds. And the building of dams which provide deep water and maintain a fairly constant water level furnish hatcheries for native fish and breeding ground for waterfowl.

Virginia is not the only state in which the beaver are staging a comeback. Practically all states are reporting beaver on the increase, and 44 states now have beaver. Quite a few states have sufficient colonies to start trapping. Until very recently the management of beaver has been all protection, now some harvesting is being undertaken. It is unfortunate that the price of beaver pelts is so low now that beaver can be trapped. Prices are as low or lower than they were during the early 1930s. Pelts of a similar quality to those that sold for $50.00 in 1946 are now being bought by fur dealers for $10.00.

The first trapping season on beaver in Virginia since the restocking of 1932-48 was in February 1953. Trapping was done in five counties and a total of 30 beaver were trapped. (Alleghany 1, Bath 13, Botetourt 4, Craig 9, and Highland 3.) Trapping will be done in these five counties during 1954 and possibly one other county. Beaver can be trapped to extinction, as once was done in Virginia and elsewhere, and it is impossible for beaver to live in a body of water without being noticed by everyone who passes by. For this reason, trapping will have to be on a permit basis, not by general open seasons as on other animals. The present policy is that, upon request of the landowner, the area is to be examined by the district game technician and game warden, and a trapping permit is issued to the landowner free of charge specifying the number of beaver to be trapped and the stream on which he may trap. The season runs

A beaver dam with pond and house. Virginia beaver are increasing.

A beaver swims away with a freshly cut branch.

from February 1 to February 28. The permit is the landowner's. He may trap or turn over his trapping privileges to someone else. All pelts must be sealed by the game warden before they are sold. Unsealed pelts cannot legally be sold. The permits are issued to the landowner so that he can control his own property and in recognition of the fact that, as the landowner, he is custodian of the beaver on his property.

It is not unusual to find beaver here in Virginia weighing 40 to 50 pounds. Beaver meat is reported good to eat. The Provinces in Canada report beaver meat is becoming popular up there and is utilized similarly to muskrats in our eastern states. Beaver are skinned so that the pelts may be stretched round. All four feet are cut off at the hair line, a cut is made around the tail, and one is made from the bottom lip along the belly to the tail. Then the hide is removed, stretched and scraped to remove fat. Beaver pelts are measured by the length and width and the two measurements totaled to grade into its size. The largest is a "blanket beaver" which has to total measurement of 67 inches.

BEAVER COLONIES IN VIRGINIA

County	Colonies	County	Colonies
Alleghany	9	Lancaster	3
Amelia	4	Louisa	3
Augusta	3	Middlesex	5
Bath	25+	Madison	1
Botetourt	16+	New Kent	2
Brunswick	1	Nottoway	4
Caroline	16	Northumberland	1
Charles City	4	Orange	2
Charlotte	1	Powhatan	2
Chesterfield	50-60+	Prince Edward	2
Craig	25+	Prince William	2
Cumberland	5	Richmond	15
Henrico	0	Rockingham	1
Dinwiddie	4	Rockbridge	2
Essex	10+	Smyth	1
Giles	3	Spottsylvania	8
Gloucester	1	Stafford	5
Grayson	1	Sussex	4
Halifax	1	Shenandoah	1
Highland	10	Westmoreland	1
King George	8	Washington	1
King & Queen	10	Tazewell	3
King William	1	York	2
TOTALS		46 Counties	284 Colonies*

* The estimated beaver population of the state in 1954 is 1,704, allowing 6 animals per colony.

DIPPING for SUCKERS

By ELMER V. RICHARDS
State Game Technician

FROM February 1st through the end of April, avid fishermen line the banks along many of our larger streams and rivers to dip for "yellow suckers" during their annual spawning run.

If, for example, you happened to be along the South Fork of the Shenandoah River near Front Royal during the middle of March, you would have seen scores of dip-nets set up along the river banks or being operated from flat-bottom boats. The fish that causes all this excitement is the common sucker or mullet, which is caught in nets as it migrates upstream to spawn. The peak of the spawning run in the Shenandoah River and its tributaries is from the middle to the end of March. It is closely associated with weather and rain. Every sucker fisherman knows that the ideal conditions for a spawning run occur when the rivers are muddy and rising.

To operate a dip-net, a person must first purchase a county dipping permit which costs one dollar at the county clerk's office. This permit is necessary, since a fishing license will not suffice. In eastern Virginia, dipping for herring is very popular and a similar license is required.

The dip-net itself is six feet square and has a one-inch or larger mesh. The net is stretched over a metal frame, which is suspended from a long wooden pole, usually 12 to 20 feet in length.

In dipping, the idea is to lower the net into the river at some outlet or tributary where suckers are sure to travel during their upstream spawning run. After the net has been dropped in the water for a period of time, it is pulled up to see if any fish were caught. Some people pull up the nets every four or five minutes. Others will pull up nets at thirty minute or longer intervals, depending on how tired they are and whether the suckers are running.

During the spawning run, suckers will leave the larger rivers to seek out tributaries and outlets. Often the fish will swim up drainage ditches or gullies to spawn. It is possible during this time to catch suckers by hand in the shallow streams where they fight their way to spawn. Some persons have been caught using pitch forks in spearing suckers.

Both the sucker and mullet are members of the same group of fishes, the *Catostomidae,* and are very similar in appearance. Because of their close resemblance, the name sucker has come to include the common white sucker and several types of mullet, which inhabit Virginia's rivers and streams. The golden mullet or "yellow sucker" is probably more common than the "white sucker." Large specimens weigh two and three pounds and measure over 20 inches. One-and-one-half-pound fish are most commonly taken.

A 6-foot dip net is lowered into the Shenandoah River for the spring run on suckers.

A warming fire helps to pass the time away. Note rise in the river. Nets are unbaited.

Some fishermen prefer to operate from a boat in the middle of the river.

The spring migrating sucker is rated as good eating by many Virginians. Limit is 20 fish a day.

When the spawning season begins in the spring the male or buck precedes the female or roe sucker in the dash upstream. The roe usually ontweigh the buck, since the female can carry 20,000 or more eggs. Spawning is done over a gravelly spot in swift waters. Eggs will hatch in about 18 to 20 days at a water temperature of about 50°F.

Several methods have been developed for hauling dip-nets out of the water. By one method, which can be called the "hand method," the fisherman simply lifts the net out of the water by brute strength alone. This way of dipping is the most difficult. Usually a light pole about 12 feet long is used. Another is the "pulley" method. Here the dip-net is fastened so as to be stationary and a large pulley is employed to raise and lower the net. The third method used could be called the "lever" or "boom-pole" method. In this, the dip-net is operated as a lever over a fulcrum, usually a forked pole driven in the ground. To lift the dip-net, the operator merely pushes down on the end of the pole and the net is lifted above the water. When the pole is released the net sinks into the water again. The "pulley" and "boom-pole" methods are employed most frequently along the Shenandoah River and its branches.

To dip suckers, one does not require much in the way of equipment. A dip-net can be bought for $3.95 and a metal frame will cost about $5.00. The only other expense is your dollar dipping permit. Some dip-nets are homemade and most dip-poles are handmade from tall, slender, growing pine.

Most suckers are dipped during the late afternoon and early evening. Very often men will come directly to the river from their place of work and will operate a dip-net long into the night. Some of the better locations along the river may have nets operating all night long. The men frequently bring food, build fires, make coffee and eat right by their nets. When tired they curl up in their cars for a nap, then waken to resume dipping.

The limit allowed to be taken with a dip-net is twenty suckers a day. There is no size limit. No game fish can be dipped nor can any other rough fish be kept.

In an average evening, two or three suckers may be taken. Sometimes a half dozen fish may come up with one pull of the net. Most of the time, however, the net is pulled up to the surface empty. As an example of the gamble there is in dipping, I recall talking to one man who had been dipping in Gooney Creek in Warren County. He said he had been at his net all day. Fifteen minutes after he set up his net he pulled up five large suckers in one lift of the net. Eight and a half hours later he caught one more fish.

Quite frequently game fish, such as bass and bream are hauled up in a dip-net. Most of these fish are returned to the water. Woe to the man who is caught keeping game fish taken in a dip-net. One fellow dipped an eight-inch bream and was caught with it. His fine was $29.60.

Some men really take their sport seriously. For example, Hugh Williams of Front Royal, Virginia, dipped 137 suckers from the South Fork of the Shenandoah River in 1953. In 1952 he took out 164 suckers. Others have similar record catches.

"EDUCATION IS THE INSTRUCTION OF THE INTELLECT IN THE LAWS OF NATURE, under which name I include not merely things and their forces, but men and their ways; and the fashioning of the affections and of the will into an earnest and loving desire to move in harmony with those laws."

—THOMAS HENRY HUXLEY
from A LIBERAL EDUCATION

CONTROVERSIAL CONSERVATION

By HENRY S. MOSBY, *Unit Leader*

Virginia Cooperative Wildlife Research Unit [1]

MAN has always depended upon the bounties of nature for his sustenance and it is unreasonable to expect him to stop eating—and die himself—rather than take the life of some other animal. We can not expect man to freeze rather than destroy a tree for the purpose of making shelter for himself and his family. These facts are self-evident. Formerly the slaying of deer and the cutting of trees was done by the individual who used these products of nature to satisfy his own wants. Today, we purchase our meat from the butcher shop and secure our lumber from a building supply store. It is seldom that we harvest directly nature's products. For this reason the conservation of our natural resources may be only of academic consideration to a large part of the American people. For example, twentieth century Americans may deplore the over-grazing of western ranges, but they still insist upon meat in their daily menu. Seldom do they associate in their minds any connection between their demand for meat and the conservation of these grass lands. Coming a little closer home, how many sportsmen, in their own thinking, consider the over-all conservation of wildlife except as the program affects their own individual interests? How many of us are conservationists in the true sense of the word?

President Theodore Roosevelt is often credited with placing the term "conservation" upon the lips of the American public. For the past half-century the word has been used over and over again until today almost everyone is "for" conservation just as they are "agin" sin. The theological term "sin" has many meanings to different individuals and it appears that the term "conservation" may have an equal number of definitions.

Most naturalists agree with Thoreau that " . . . Every creature is better alive than dead, men and moose and pine-trees, and he who understands it aright will rather preserve its life than destroy it." It is equally true, however, that most professional naturalists would consider themselves remiss if they did not personally destroy a mortally wounded or sick animal rather than permit it to die a painful and lingering death. How can a conservationist kill and protect at the same time? Can a quail hunter and a bird watcher both be called "conservationists?" How can we reconcile the different approaches of the National Park Service, where no life—neither plant nor animal—may be taken and the U. S. Forest Service where the cutting of timber is a standard management practice and the harvesting of the surplus game is considered logical? Again, why does the Fish and Wildlife Service purchase and develop wildlife refuges where waterfowl are encouraged to nest and rear their young without hindrance and, within the same agency, regulations are promulgated and enforced for the hunting of ducks and geese? State wildlife agencies devote a majority of their attention to the removal of wild game by sportsmen during the fall and, at the same time, prosecute anyone who kills wild animals

* Adapted from an article of the same title which appeared in the June 1953 issue of the WILSON BULLETIN.

[1] Release No. 54-2 of the Virginia Cooperative Wildlife Research Unit, Virginia Polytechnic Institute, Virginia Commission of Game and Inland Fisheries, Wildlife Management Institute and Fish and Wildlife Service, cooperating.

at other seasons of the year. All of these agencies consider themselves conservation organizations dedicated to the preservation of our various natural resources. Most individuals would agree that such divergent activities actually are conservation measures *only* if they have an acceptable and mutually agreeable understanding of the meaning of conservation.

The forester holds that his axe is the best tool for the conservation of the forest; we would agree with him if we accept the fact that the cutting of the timber is the only way we can devote the trees to human use and still "maintain them (the forests) in continued being." True, ecological succession would gradually replace the same species of trees over a long period of time if the old monarchs of the forest were permitted to fall, rot and thus leave an open area for other trees to grow.

Many naturalists think that any form of hunting is destructive and therefore does not fall in the category of conservation by any stretch of the imagination. On the other hand, most state and federal wildlife agencies take the opposite view. They hold that the gun is a tool that will permit the removal of surplus game, devoting this surplus to a high human use, and that they, like the foresters, can best guard and preserve our wildlife resources by judicious utilization. Our federal and state parks, on the other hand, permit neither gun nor axe to be used on area under their jurisdiction except under extremely unusual circumstances. Are they both right?

We must accept the fact that man by his activities has changed the face of this earth and that we must accept him, his desires, his needs and his demands in our conservation activities. Bird protection—especially of our song birds—should include the complete prohibition of the taking by man of any species which is or will be endangered by such removal. This is the only way to conserve certain species. On the other hand, many of our game birds have been harvested annually without detriment to the species. Would it be true conservation to prohibit the taking of all birds because such regulations are necessary to preserve certain species? Would it be medically sound to remove the appendix of every person—man, woman and child—because it has been established that an appendectomy has saved the lives of scores of persons? The logic is identical and the answer is obvious.

Most of our parks today are having great diffienlty in "preserving and guarding" their natural resources due to the excessive human use of these areas. State and national parks were established, primarily, so that man could see and enjoy nature and utilize the park resources by such observations. However, man, by his excessive numbers, is often destroying the beanty which the park officials are endeavoring to preserve for him. Protection of the deer in many states has resulted in the nearly complete destruction of the "fodder" vegetation and the starvation of thousands of animals. Both situations employ complete protection of nature from direct utilization by man. In both instances the objective is to conserve the natural resource but it is questionable if complete protection is wise conservation—to the same degree—in both instances. Complete protection of the flora and fauna from all direct utilization by man is necessary in preserving a park; such protection is less essential in the intelligent management of a deer herd.

Conservationists encounter many controversial animals in the sporting field. Some unthinking fox hunters would eliminate all deer because deer distract their fox hounds. Many hot-headed quail hunters wonld destroy all foxes because occasionally a fox will eat a quail for food. Bear are eagerly sought after by many hunters but are condemned by stock raisers. And so it goes. Many of these disputes arise from selfishness and a lack of appreciation of the fact that each sporting species has its place and, on occasions, it can get out of place by excessive numbers. However, if all sportsmen accepted the principle of "use without abuse or destruction," such friction would not be evident among the different factions of hunters and fishermen.

Deer populations must conform ta faod supply. Legitimate hunting is encouraged; poaching is made a serious affence.

Plantings are made to encourage the wild turkey and hunting is regulated to utilize the surplus.

April is dogwood time in Virginia woodlands. (VSCC photo by Flournoy)

Virginia's State Flower - -

THE DOGWOOD

By DOROTHY TROUBETZKOY

Editorial Assistant

VIRGINIA'S flowering dogwood (*Cornus florida*) has been the official floral emblem of the Commonwealth since March 1918 when it successfully edged out the Virginia creeper which lost the honor by just a single vote. The dogwood was designated our official flower by a joint resolution, signed by the presiding officers of the Senate and the House of Delegates on March 6 and a few days later, by the Governor.

The flowering dogwood is a large shrub or small tree which usually grows from 4 to 12 feet tall, though individual trees often attain much greater heights. It has very rough bark and spreading branches. The wood, close-grained and hard, is used especially for shuttles and cogs in textile machinery and for inlaying in fine cabinet work.

The range of the flowering dogwood is in dry woods from southern Maine westward to Ontario and southern Minnesota and southward to Florida and Texas. It tolerates both low and high altitudes. In Virginia it is found both in tidewater and up to an altitude of 4,400 feet above sea level in the mountains.

From the middle of April on its radiant flowering lights the woods and gardens of the Old Dominion. In fall the dogwood continues to hold a bright spot with its red-mottled leaves and scarlet fruit which usually lasts well into the winter.

What we speak of as the "flower" is actually a small compact cluster of inconspicuous greenish-white true flowers surrounded by large showy petal-like braets which are most commonly white, but sometimes are pink and occasionally even rose-red. Another familiar plant whose bracts similarly are confused with flowers is the Poinsettia so popular at Christmas time.

The red fruit of the dogwood is a spherical drupe, either one- or two-celled in our species, and the seeds are oblong. (A drupe is a fleshy fruit with a hard seed at the center. The peach is a good example.) Since the berry-like drupes of the dogwood which ripen late in the summer, stay on the branches well into the winter months, they are very useful as a wildlife food for upland game birds, songbirds, waterfowl, small mammals like the chipmunk and the white-footed mouse and fur and game animals like deer, bear, beaver, rabbit, skunk and fox, some of which utilize not only the fruit, but also wood and foliage as browse.

The dogwood foliage is distinguished by its two-way whitish hairs, flattened to the surface and attached at the middle of the leaf.

There are a great many varieties of dogwoods, sometimes called "cornels," about 50 in the world and about 17 in the United States. All are shrubs except our flowering dogwood and a Pacific coast variety which often attain the stature of small trees. The different species vary somewhat in their habitat requirements, but most of them prefer fertile, moist soil in open woods or along streams, roadsides or fencerows. They make excellent hedgerows.

The dogwood has been known by many names. Since it was ideal for arrows, it was used for their manufacture in both the Old and New World, and is consequently known in literature both as "arrow-wood" and "Indian arrow-wood." Some of its other sobriquets are "false boxwood," "cornelian tree," "Nature's-mistake," "Florida dogwood," "white cornel," "spindle tree" and "bird cherry." Our scientific name is derived from *cornu*, the Latin word for horn, in allusion to the hardness of the wood.

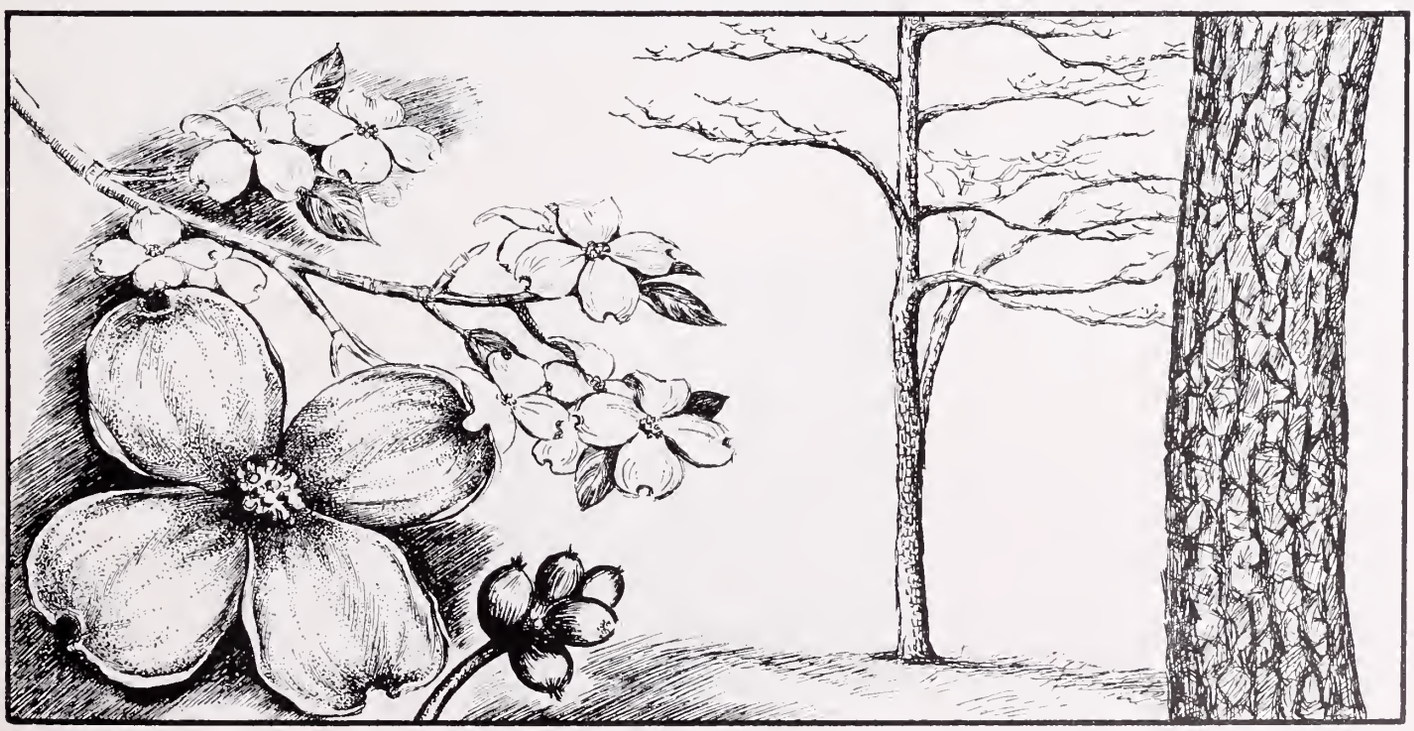
From very ancient times, legends have clustered about the dogwood. On Mount Ida in Greece dogwood grew in the grove sacred to Apollo and it was believed that the god was angered by the impious cutting of those trees which made up part of the lumber in the Trojan Horse.

Most familiar of the legends is that which identifies the wood of the dogwood with the lumber of the Cross. Jesus, so the story goes, was so moved to pity by the sorrowing tree put to this cruel use that he comforted it by promising it would never again grow large enough to be employed for such a purpose. It is said too that the bracts which resemble the shape of the Greek cross bear nail marks of the crucifixion. The mottling of the leaves with red in autumn also has been associated with the Savior's blood at Calvary.

We owe our choice of the cardinal as the state bird largely to the efforts of the Federated Garden Clubs of Virginia which made its adoption one of its main projects during the presidency of Mrs. J. H. Adams. Similarly we are indebted to the Garden Club of Virginia, particularly the Garden Club of Norfolk and Mrs. Frederick Kellam who was president during the campaign which resulted in the selection of the dogwood as our state flower. In 1932 the Garden Club of Virginia followed up this official recognition with another project for planting dogwood which had as its slogan, "A million dogwood by 1935."

Again this year legislators have been excited to activity in behalf of the dogwood and Senate Bill Number 88, better known as the Byrd-Godwin Bill, is designed to increase the legal protection of the dogwood—so aptly called "spindle tree"—against indiscriminate commercial use. The act stipulates that it shall be unlawful for any person, either for himself or as an agent of someone else, to purchase or otherwise acquire for manufacturing purposes any dogwood cut from any tree which has a diameter at ground level of less than six inches. Forest wardens are to post these provisions in all counties and have notices published in the newspapers. Violators will be fined $10. for each illegal dogwood.

Whether the Garden Club of Virginia literally succeeded in its objective of a million dogwood, certainly it seems as though there must be that and more when we drive along Virginia's highways in the spring and see the trees with their flat spreading white blossoms gleaming through the open woods among the other trees. As valuable as they are lovely, with their delicate floral-like bracts, their fine-grained sturdy wood, their fruits and browse for wildlife, our dogwood trees are ideal for planting to beautify the landscape and to attract the birds.



Maimed Maryland Deer Bagged in Virginia

Game Warden R. Stuart Purks, of Fredericksburg tells us that a buck deer, killed at Fairview, five miles from the Potomac River, was found to bear Maryland ear tag No. 254. This deer had been live-trapped in Harford County, Maryland, on the U. S. Army Aberdeen Proving Ground, and released in the McIntosh Swamp near Leonardstown, St. Marys County, Maryland, on February 8, 1952.

When killed in Virginia the deer was found to have had his left leg taken off at the knee.

Warden Purks also reports that three otters were caught in a Fyke net in 15 feet of water in the Rappahannock River opposite King George County. They had cut a hole through a live box and released about 500 pounds of catfish. The otters weighed about 12 pounds each.

Lisa and the One-Legged Poacher

Ed Gorman, Chesterfield County game warden reports an unusual incident involving his dog, Lisa, a two-year-old female Weimarrunner who assisted him in apprehending a game violator on January 5.

Gorman was patrolling the James River with an assistant Ronnie Burrell when he noticed a hunter pull up to the Meadowville Farm on the James and enter the posted woods.

The dog was taken to the boat and sniffed the tracks. Then she was turned loose in the woods. Gorman says the dog growled and raised her fur when scenting the poacher's trail and took off into the woods on the double. A few minutes later Lisa was heard baying in a thicket 400 yards ahead where illegal hunter, Maxey Martin, took refuge in a honeysuckle thicket.

Martin, a one-legged man, was arrested and fined $14.25 for illegally hunting on posted property.

"Wotcha graplin' for?"

Mute Evidence of Forest Drama

Game Warden Gordon Preston of Franklin County recently brought in a pair of antlers of white-tailed deer which were taken from two buck deer which had been locked in combat to the death. The antlers were picked up by Edward Millison of Calaway, Virginia, while he was in Buckingham County on November 23, 1953.

Warden Preston shows locked antlers.

During the rutting season, it is usual for buck deer to fight and occasionally their antlers will become interlocked during the struggle, leaving no alternative but death to one and sometimes both combatants.

John Phillips Resigns

John Phillips, assistant game warden of Chesterfield County, resigned on March 1 to take a post with the Chesterfield County Police, reports Game Warden Edward Gorman. No successor to Phillips has so far been selected.

Mr. Phillips has been with the Commission since August 1952. He is married and has a daughter, Nora.

Lucky Shot From Antique Double Barrelled Shotgun Bags 8-Pointer

W. D. Hampton, game warden of Grayson County, has sent in news that his father, G. T. Hampton, now in his 87th year, brought down an 8-point buck on the first morning of the deer season, just after sunrise, with a single shot from an old double barreled shotgun which is over 50 years old.

Virginia Tenth in Hunting License Sales

Virginia ranks 10th among the 48 states in the number of hunting licenses sold and 16th among the states in the amount of revenue derived from the sale of hunting licenses sold. The Commonwealth sold 473,116 hunting licenses during the year ending June 30, 1953. This was 3.18 per cent of all hunting licenses sold in the United States during that period.

MORE DEER, BEAR AND TURKEYS IN 1953-54

Three hundred and twelve bears were killed during the 1953-54 season west of the Blue Ridge, in comparison to last year's kill of 290. Augusta County led, with 127 bears killed, and was followed by Rockingham with 31 and Bath with 30.

The season's deer kill west of the Blue Ridge was 5,139 and east of the Blue Ridge the figure was 6,624, a total of 11,763 compared to last year's total of 10.867.

There was a dramatic increase in the total turkey kill which rose from 1,608 during the 1952-53 season to 2,530 this year. Buckingham County with a kill of 164, Bath with 161 and Augusta with 129 were at the top of the list in number of turkeys killed.

FWS ISSUES NEW PUBLICATION ON SALMON

The Fish and Wildlife Service of the Department of the Interior has issued a new publication, *Pacific Salmon: Hatchery Propogation and Its Role in Fishery Management*, available at 30c a copy from the Government Printing Office.

How salmon hatchery operations on the Pacific coast are helping to maintain this valuable commercial and sport fishery resource is the theme of the book which describes briefly the species, reviews present-day methods of artificial propogation, and explains the role of the hatchery in the attempt to maintain the fisheries at their highest possible level.

Salmon have played a vital part in the development of the Pacific Northwest and Alaska. Hatchery-reared salmon are of great importance now that natural propogation is curtailed by pollution, dams and industrial needs for water power.

4-H CLUB LEADER WINS YOUNG OUTDOOR AMERICANS TRIP

Sixteen-year-old Nancy Chiles, junior at Hermitage High School, Richmond, Virginia, was selected recently as Virginia's representative in the national "Young Outdoor Americans" program sponsored by the Izaak Walton League of America. She was the guest of the League at its annual convention in Chicago on March 10-12 and joined top conservationists from other states in what was the first youth conservation congress of its kind in America.

Miss Chiles was selected by a five-

Nancy Chiles, center, is congratulated by Committee Chairman Ira Grinnan of Fredericksburg. Looking on, left to right, are Vernon Graves, Mrs. Louise S. Rison (Assistant Home Demonstration Agent), and Paul O. Peters, State Division President.

member Governor's Committee on the basis of her accomplishments and interests in conservation work. Ira D. Grinnan, former president of the Virginia Division of the Izaak Walton League of America, made the announcement.

The girl selected for this honor had completed 35 projects, including 10 demonstrations alone and 10 temporary demonstrations. She has entered 22 contests, placing first in three county contests, two district contests and two state contests. She is president of the student body at Hermitage High School and has been active in conservation work on the farm in western Henrico County where she lives with her parents, Mr. and Mrs. Roy H. Chiles on River Road.

Runner-up for the state honor was Stacey Wilkerson, a 16-year-old Henrico student and junior at Highland Springs High School. Third place went to 17-year-old Frank E. Thompson, Jr. of Richmond with a five-year outstanding record with the Boy Scouts with whom he has earned the rank of eagle with palms.

The "Young Outdoor Americans" program was designed to stimulate work and recognition in conservation for the youth of America.

DROP IN MAN-CAUSED FIRES ON NATIONAL FORESTS

A report from the United States Department of Agriculture shows that man-caused fires on national forests dropped 14 per cent during 1953, from 7,001 in 1952 to 5,960 in 1953. The total number of fires on national forests remained about the same, however, 11,950 for 1953 compared to 11,955 for 1952.

Forest Service officials believe the decrease in fires caused by human carelessness is particularly commendable because of the severe drought and extreme fire hazard during the past year in many parts of the country at times when many people were using the woods. Under such conditions, ordinarily, forest fires may be expected to increase in spite of all precautions.

The decrease in man-caused fires is believed to be the result of increased public awareness of forest fire dangers, helped by the Smokey Bear fire prevention campaign conducted by state and federal forest services.

Wildlife Questions and Answers

Ques.: Before the passenger pigeons were exterminated, what were the routes of their migrations?

Ans.: The migrations of passenger pigeans were not regulor seasonol migratians like those of ducks ond geese, but were undertaken chiefly in search of faod. So swift and tireless were they in flight that they could pass fram zone to zone in a day ond if an unseosonal snowstorm in the north covered their food supply, they might all go south en masse, hiding the sun and dorkening the earth and the roar of their wings was campared to that of o hurricane. "Thus they passed far hours or days together," writes Farbush, "while the peaple in the country . . . kept up a fusillade . . . and . . . were stationed with oars, poles, shingles ond other weapans to knock down the swarming birds."

Ques.: Is it necessary for servicemen to purchase hunting and fishing licenses in Virginia?

Ans.: Yes, servicemen must buy hunting and fishing licenses, but if they ore stationed or located in Virginia, they are entitled to buy resident licenses. That means that a serviceman, originolly o resident af Virginia who has not changed his permanent residence, but is statianed on military or naval duty elsewhere, can still purchase the resident license.

Ques.: Can you give me the exact quotation of Thoreau's about the ability of crows to survive destruction and change?

Ans.: Perhaps you have in mind Thoreau's comment: "This bird sees the white man come and the Indian withdraw, but it withdraws not. Its untamed voice is still heard above the tinkle of the forge. It sees o race pass away, but it passes nat away. It remains to remind us of obariginal nature."

Ques.: Please tell me the names, locations and size of state wildlife refuges and sanctuaries in Virginia.

Ans.: The wildlife refuges ond sonctuories of the stote ore Haven in Roonoke County, 6,264 ocres; Sussex in the county of that nome, 2,087 ocres; Windsor Farm in New Kent County, 1,289 ocres; ond Cumberlond Game Form, Cumberlond County, 5,000 ocres. There ore others under federol jurisdiction ot Assateogue, Bock Boy, in Alleghany County, Big Levels in the George Woshington Notionol Forest, North ond Patterson creeks in Botetourt County, Borbours Creek in Croig County, Comers Rock in Wythe County, Hurricone Bronch in Smyth County, Feother Comp in Woshington ond Glodes in Wise County.

Ques.: Can you tell me if any streams not already included in the "List of Restocked Waters and Waters Open to Public Fishing" have been stocked with trout?

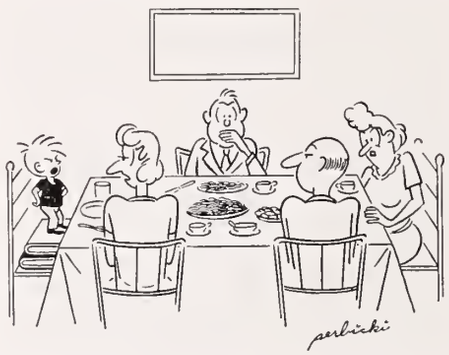
Ans.: Big Reed Islond Creek in Corroll County, Smith River in Henry County, Stony Creek, Mountain Fork of Stony Creek ond Stroight Fork (or Bronch) of Stony Creek, in Wise County hove oll been stocked with roinbow trout ond Noked Creek in Poge-Rockinghom counties hos been stocked with brook ond roinbow trout.

Ques.: Is the ruby-throated hummingbird the smallest bird in America and where does it spend its winters?

Ans.: No, there are three American hummingbirds which are smaller, two of them in the United States. The Helenas hummingbird of Cubo, 2½ inches long, is the smallest bird in the world. The Calliope hummingbird of the high western mountains is the smallest in the United States, measuring o scant 3 inches. Only a fraction of an inch longer is Costa's hummingbird which inhabits the arid southwest. The Lucifer hummingbird of southern Arizono and western Texas and the ruby-throated hummingbird, smallest bird of eastern North America, both measure 3½ inches. The ruby-throat winters in Mexico ond Central Americo, making a dromatic non-stop flight across the Gulf of Mexico to Yucatan.

Ques.: How many different kinds of animals get rabies?

Ans.: Rabies may accur in all warm-blooded animals, including birds. Although most cammanly faund among carnivorous onimals like the dag, fox and wolf, such animals as rabbit, sheep and deer hove been known ta contract the disease.



"Awright, hold up on the spaghetti. I just lost a couple o' fishing worms."

Ques.: Is the carp native to America?

Ans.: No, the carp, which wos introduced from Chino to Europe os eorly os 1227, wos first successfully brought to the United Stotes in 1877, though previous efforts had been mode to introduce it here. It was propogoted in ponds in Woshington, D. C. ond in 1879 wos distributed widely throughout the country. It is now found in oll stotes with the possible exception of Maine ond Florido ond is present in mony Virginio Lakes.

Ques.: Are there many marine mammals in Virginia's waters?

Ans.: Not o greot mony morine mommols swim in the woters off Virginia. Wholes, dolphins, porpoises ond blackfish ore the most numerous. The bottle-nosed dolphin and common dolphin ore often seen copering offshore or ore found stronded on beoches. One of the few North Americon records of the little known long-beoked dolphin is from Norfolk. The spotted dolphin, the folse killer whole ond the horbor seol ore sometimes spied in Virginio woters.

Ques.: Are there many shrews in Virginia and do they have any value?

Ans.: Despite their seeming rarity, since shrews are seldom seen, they are omong aur most widely distributed mommals, occurring in every type af habitat from salt morsh to mountain forest, even in porks and gardens. Short-tailed shrews ore the mast common ond are often mistaken for baby males. Among the smallest animals in the world are the least shrew and the pigmy shrew, only about three inches long. They are highly nervous ond can easily be frightened ta death. Long-tailed shrews ore forest dwellers. Shrews are helpful in our wor against insects and among the few animals which do not conflict with the interests af man in any woy.

Ques.: Is it true that the nighthawk perches differently from other birds?

Ans.: Yes, the nighthawk perches lengthwise on a tree limb, not crosswise as most birds do.

Ques.: Is it possible to grow the fringed gentian in a naturalized wild garden?

Ans.: Though one of our most elusive wildflowers, the fringed gentian has been brought under successful cultivation. The seed, which ripens within two or three weeks ofter the blossams have gane by in the fall, should be gathered as saon as ripe and planted in sandy sail containing a small percentage of alkaline humus. Never put them in acid soil nor let the seeds or seedlings dry aut.

Ques.: Is it true that the raccoon always washes its food?

Ans.: This is usuol, but not always true, since mony of the raccoon's meols ore consumed away from water and many captive 'coons fail to show this comman troit.

Ques.: Is the whooping crane the rarest bird in the United States?

Ans.: Prabably even rorer is the ivory-billed woodpecker, though there is o possibility the species is extinct since none hos been observed recently ond it hos been dongerously close to extinction for some yeors. Often canfused with the smoller pileoted woodpecker, the ivory-billed hos found survivol difficult becouse it needs virgin or primitive forests, with deod trees in o certoin stoge of decoy, for its sustenance. There ore now 24 whooping crones wintering ot the Aronsos Refuge in Texos, on increose of three over lost yeor's count.

Ques.: Are there many bats in Virginia?

Ans.: Twelve species of bots hove been recorded in Virginia: the little brown bot, keen bot, Indiono bot, leost brown bot, silver-hoired bot, pipistrelle, big brown bot, red bot, hoory bot, evening bot, Rofinesque's big-eared bot, ond LeConte's bigeored bat. The little brown bat is the most obundont ond widely distributed in Virginio.

Ques.: Can you tell me in what ways the common toad is useful?

Ans.: Every common tood eots obout 10,000 garden pests o yeor ond does work whose volue to the former hos been estimoted ot $20.

Spring Herring Run

Every spring huge numbers of herring move into Virginia's eastern fresh waters to spawn. The run lasts from late February until well into May, depending upon the temperature. The nature of the water and terrain determines the type of net and method of dipping. It's lots of fun and hordes of "dippers" have an enjoyable time.

(Commission photos by L. G. Kesteloo)

At times fishing is slow, but occasionally on a good run the net is so full of fish that it is hard for the fisherman to lift it out of the water.

On Cat Point Creek in Richmond County, Chicken wire "stops" are used to channel the herring through openings. The operator places his net over this opening, keeping one hand on the mesh in order to feel the vibration when fish hit the net.

Fish are picked out of the net and placed into bags for transportation. Sometimes a beaver swims into the net, usually tearing it up badly before being freed.

Fish are usually scaled and cleaned. The roe is sometimes replaced in the body cavity before salting. Many prefer to salt the entire fish, cleaning just before cooking.

After soaking in brine, the fish are placed into a wooden tub or crock; a layer of salt and a layer of fish until the tub is filled. Many variations are to be found in preserving herring. Pepper, brown sugar and molasses are among the many ingredients that may be added to the salt.

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